## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 18 March 2004 (18.03.2004)

**PCT** 

## (10) International Publication Number WO 2004/02251 A1

(51) International Patent Classification<sup>7</sup>: 13/04, 13/14, A22C 25/04, 29/00

B07B 1/12,

(21) International Application Number:

PCT/AU2003/001157

(22) International Filing Date:

5 September 2003 (05.09.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2002951207 5 Septen

5 September 2002 (05.09.2002)

(71) Applicant and

(72) Inventor: MCROBERT, Ian [AU/AU]; 148 Eleventh Road, Wungong, Western Australia 6112 (AU).

(74) Agent: MIZZI, Anthony, Paul; Griffith Hack, Level 6, 256 Adelaide Terrace, Perth, Western Australia 6000 (AU).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

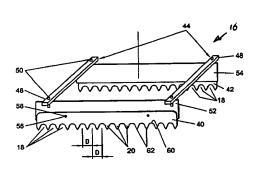
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

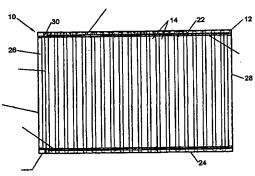
## Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SPREADING DEVICE AND ADJUSTABLE GRADING SYSTEM INCORPORATING SAME





(57) Abstract: An adjustable grading system (10) comprises a frame (12), a plurality of elongated bars (14) retained at opposite ends within the frame (12) and moveable along the frame, and a spring device (16). The spring device (16) is provided with a plurality of recesses (18) each for receiving a bar (14). Adjacent recesses (18) are spaced apart by a pre-determined spacing distance D and separated by a tooth (20). The spring device (16) includes first and second combs (40 and 42) each of which are pivotally coupled to link bars (46 and 48). The pivot connection allows the spring device (16) to be manipulated so that the distance between the combs (40 and 42) can be varied while maintaining them parallel to each other. A group of bars (14) can be spaced by the spacing distance D by orientating the device (16) so that the combs (40 and 42) extend diagonally across the group of bars (14) at an angle so that their respective teeth (20) are disposed between adjacent bars (14). The combs are then pushed onto the bars (14) so that individual bars are guided into respective recesses. By manipulating the device (16) so that the combs (40 and 42) lie substantially transversely to the bars (14), the bars (14) are spaced by the spacing distance D.

WO 2004/02251 A